9-19-01

MEMORANDUM

SUBJECT: **Propanil.** List A Reregistration Case 0226. PC Code 028201. **Product Chemistry Chapter for the Reregistration Eligibility Decision [RED] Document.** DP Barcode D277991.

FROM: K. Dockter, Chemist
Reregistration Branch 2
Health Effects Division [7509C]

THRU: Alan Nielsen, Branch Senior Scientist
Reregistration Branch 2
Health Effects Division [7509C]

TO: Richard Griffin, Risk Assessor
Reregistration Branch 2
Health Effects Division [7509C]

Attached is the propanil product chemistry chapter. It was prepared by Dynamac Corp. under the supervision of HED. It has undergone secondary and tertiary review in HED to comply with Agency policies.

cc: RF, Dockter, R. Griffin, S. Kinard, S. Makris, S. Recore.
RD\I Propanil RED Team.
7509C:RRB2:Rm712N:57886:KD/kd
Propanil.RED [984] = D**277991**.mem.

PROPANIL
PC Code 028201; Case No. 0226

Reregistration Eligibility Decision: Product Chemistry Considerations

June 19, 2001

Contract No. 68-W-99-053

Submitted to:
U.S. Environmental Protection Agency
Arlington, VA

Submitted by:
Dynamac Corporation
20440 Century Boulevard
Germantown, MD 20874

PROPANIL

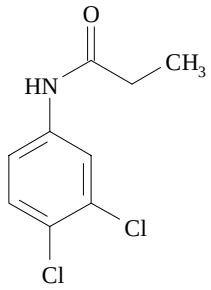
REREGISTRATION ELIGIBILITY DECISION:

PRODUCT CHEMISTRY CONSIDERATIONS

PC Code 028201; Case No. 0226

DESCRIPTION OF CHEMICAL

Propanil [3,4-dichloropropionanilide] is a postemergence herbicide registered for use on barley, oats, rice, and wheat.



Empirical Formula:	$C_9H_9Cl_2NO$
Molecular Weight:	218.1
CAS Registry No.:	709-98-8
PC Code:	028201

IDENTIFICATION OF ACTIVE INGREDIENT

Propanil is a medium to dark gray crystalline solid with a melting point of 87-89 C, density of 1.25 g/mL, octanol/water partition coefficient (P_{ow}) of 193, and vapor pressure of 9.1×10^{-7} torr at 25 C. Propanil is slightly soluble in water (0.002 g/mL at 20 C), and is completely soluble in ketones, alcohols, ethers, and chlorinated hydrocarbons, and moderately soluble in xylene, benzene, and toluene.

MANUFACTURING-USE PRODUCTS

A search of the Reference Files System (REFS) conducted 3/7/01 identified three propanil manufacturing-use products (MPs) registered under PC Code 028201: the Rohm and Haas 97% technical (T; EPA Reg. No. 707-181), and the Riceco LLC 98% and 95% Ts (EPA Reg. Nos. 71085-21 and 71085-1, respectively). The Riceco 95% T was transferred (9/97) from Cedar Chemical Corporation (EPA Reg. No. 56077-33) and the Riceco 98% T was transferred (7/00) from Griffin LLC (EPA Reg No. 1812-422). Only the Rohm and Haas and Riceco T/TGAIs are subject to a reregistration eligibility decision.

REGULATORY BACKGROUND

The Product Chemistry Chapter of the Propanil Reregistration Standard dated 8/26/87 and Guidance Document dated 12/87 required that updated generic and product-specific product chemistry data be submitted for propanil because new requirements had been introduced, and previously submitted data needed to be updated. In addition, a Data Call-In (DCI) dated 6/9/87 required the registrants to analyze their propanil products for halogenated dibenzo-p-dioxin and dibenzofuran contaminants. Based on the submitted data, the Agency does not expect any potential for the formation of halogenated dibenzo-p-dioxin or dibenzofuran contaminants in measurable quantities during the manufacture of propanil.

The current status of the product chemistry data requirements for the propanil T/TGAIs is presented in the attached data summary tables. Refer to these tables for a listing of the outstanding product chemistry data requirements.

CONCLUSIONS

Most pertinent product chemistry data requirements are satisfied for the Riceco 98% T/TGAI, except that additional data are required concerning UV/visible absorption (OPPTS 830.7050). Additional data are required for the Rohm and Haas 97% T concerning enforcement analytical method, stability, storage stability, corrosion characteristics, pH, UV/visible absorption, density, and solubility (OPPTS 830.1800, 6313, 6317, 6320, 7000, 7050, 7300, and 7840). Additional data are required for the Riceco 95% T/TGAI concerning preliminary analysis, enforcement analytical method, and all physical/chemical properties (OPPTS 830.1700, 1800, and 6302-7950). Provided that the registrants submit the data required in the attached data summary tables for the propanil T/TGAIs, and either certify that the suppliers of beginning materials and the manufacturing processes have not changed since the last comprehensive product chemistry reviews or submit complete updated product chemistry data packages, the Agency has no objections to the reregistration of propanil with respect to the product chemistry data requirements.

Case No. 0226
Chemical No. 028201

Case Name: Propanil
Registrant: Rohm and Haas Company
Product(s): 97% T (EPA Reg. No. 707-181)

PRODUCT CHEMISTRY DATA SUMMARY

Guideline Number	Requirement	Are Data Requirements Fulfilled? [1]	MRID Number [2]
830.1550	Product identity and composition	Y	40477301 [3], CSF 12/10/96 [4]
830.1600	Description of materials used to produce the product	Y	40477301 [3]
830.1620	Description of production process	Y	40477301 [3], Letter 3/27/96 [5]
830.1670	Discussion of formation of impurities	Y	40477301 [3]
830.1700	Preliminary analysis	Y	40477301 [6], 43969201 [5]
830.1750	Certified limits	Y	40477301 [6], 43969201 [5], CSF 12/10/96 [4]
830.1800	Enforcement analytical method	N [7]	40477301 [6], 43969201 [5]
830.6302	Color	Y	40477302 [6]
830.6303	Physical state	Y	40477302 [6]
830.6304	Odor	Y	40477302 [6]
830.6313	Stability to normal and elevated temperatures, metals, and metal ions	N [8]	40477302 [6]
830.6314	Oxidation/reduction: chemical incompatibility	N/A [9]	
830.6315	Flammability	N/A [10]	
830.6316	Explodability	N/A [9]	
830.6317	Storage stability	N	
830.6319	Miscibility	N/A [10]	
830.6320	Corrosion characteristics	N	
830.7000	pH	N [11]	40477302 [6]
830.7050	UV/Visible absorption	N [12]	
830.7100	Viscosity	N/A [10]	
830.7200	Melting point/melting range	Y	40477302 [6]
830.7220	Boiling point/boiling range	N/A [10]	
830.7300	Density/relative density/bulk density	N [11]	40477302 [6]
830.7370	Dissociation constants in water	N/A [9]	
830.7550	Partition coefficient (n-octanol/water), shake flask method	Y	00150488 [13]
830.7840	Water solubility: column elution method; shake flask method	N [11]	40477302 [6]
830.7950	Vapor pressure	Y	40477302 [6], 40923201 [14]

[1] Y = Yes; N = No; N/A = Not Applicable.

[2] References were reviewed as noted.

[3] CB Nos. 4972, 4973, and 4974, 3/14/89, G. Makhijani.

[4] Registration Division, D232948, 1/31/97, H. Podall; for the alternate formulation.

[5] Registration Division, D225017, 4/19/96, S. Mathur; for the alternate formulation.

[6] DXXXXXX, currently under review.

[7] The method for determination of the ai must be submitted as a nonconfidential method.

[8] Data demonstrating the stability of the T/TGAI at normal and elevated temperatures and on exposure to metals and metal ions are required.

[9] Based on the chemical properties of propanil, these data are not required for the T/TGAI.

[10] Data are not required because the T/TGAI is a solid at room temperature.

[11] Information is required concerning the method used and/or the temperature at which the determination(s) was made.

[12] The OPPTS Series 830, Product Properties Test Guidelines require data pertaining to UV/visible absorption for the PAI.

[13] Propanil Reregistration Standard, 8/26/87.

[14] CB No. 7467, 3/21/91, R. Perfetti.

Case No. 0226
Chemical No. 028201

Case Name: Propanil
Registrant: Riceco LLC
Product(s): 98% T (EPA Reg. No. 71085-21)

PRODUCT CHEMISTRY DATA SUMMARY

Guideline Number	Requirement	Are Data Requirements Fulfilled? [1]	MRID Number [2]
830.1550	Product identity and composition	Y [3]	44681701, CSF 5/10/99 [3]
830.1600	Description of materials used to produce the product	Y	44681701
830.1620	Description of production process	Y	44681701
830.1670	Discussion of formation of impurities	Y	44681701
830.1700	Preliminary analysis	Y	44681702
830.1750	Certified limits	Y [3]	44681702, CSF 5/10/99 [3]
830.1800	Enforcement analytical method	Y	44681703, 44681704
830.6302	Color	Y	44751501
830.6303	Physical state	Y	44751501
830.6304	Odor	Y	44751501
830.6313	Stability to normal and elevated temperatures, metals, and metal ions	Y	44751501
830.6314	Oxidation/reduction: chemical incompatibility	Y	44751501
830.6315	Flammability	N/A [4]	
830.6316	Explodability	Y	44751501
830.6317	Storage stability	Y	44751501
830.6319	Miscibility	N/A [4]	
830.6320	Corrosion characteristics	Y	44751501
830.7000	pH	Y	44751501
830.7050	UV/Visible absorption	N [5]	
830.7100	Viscosity	N/A [4]	
830.7200	Melting point/melting range	Y	44751501
830.7220	Boiling point/boiling range	N/A [4]	
830.7300	Density/relative density/bulk density	Y	44751501
830.7370	Dissociation constants in water	N/A [6]	
830.7550	Partition coefficient (n-octanol/water), shake flask method	Y [7]	
830.7840	Water solubility: column elution method; shake flask method	Y [7]	
830.7950	Vapor pressure	Y [7]	

[1] Y = Yes; N = No; N/A = Not Applicable. The Riceco 98% T was transferred (7/00) from Griffin LLC (EPA Reg. No. 1812-422), and the data cited above are based on data submitted by Griffin and a "me-too" registration. The registrant must confirm that the manufacturing site and process have not changed since the product transfer; otherwise, additional product chemistry data may be required.

[2] All references were reviewed by the Registration Division under D253649, 4/9/99, A. Smith, unless otherwise noted.

[3] The CSF dated 5/10/99 obtained from the product jacket includes the changes to the nominal concentration and certified limits for the active ingredient required by RD Memorandum D253649, 4/9/99, A. Smith; however, the CSF must be revised to reflect the current registrant and registration number.

[4] Data are not required because the T/TGAI is a solid at room temperature.

[5] The OPPTS Series 830, Product Properties Test Guidelines require data pertaining to UV/visible absorption for the PAI.

[6] Based on the chemical properties of propanil, these data are not required for the T/TGAI.

[7] The technical product was found to be substantially similar to the registered Rohm and Haas technical product and qualified as a “me-too” registration; therefore, these generic requirements will be satisfied based on Rohm and Haas data.

Case No. 0226
Chemical No. 028201

Case Name: Propanil
Registrant: Riceco LLC
Product(s): 95% T (EPA Reg. No. 71085-1)

PRODUCT CHEMISTRY DATA SUMMARY

Guideline Number	Requirement	Are Data Requirements Fulfilled? [1]	MRID Number [2]
830.1550	Product identity and composition	Y	40633001, Letter 6/29/90 [3], CSF 6/22/98 [4]
830.1600	Description of materials used to produce the product	Y	40633001, Letter 6/29/90 [3]
830.1620	Description of production process	Y	40633001, Letter 6/29/90 [3]
830.1670	Discussion of formation of impurities	Y	40633001
830.1700	Preliminary analysis	N	
830.1750	Certified limits	Y	40633001, CSF 6/22/98 [4]
830.1800	Enforcement analytical method	N	
830.6302	Color	N	
830.6303	Physical state	N	
830.6304	Odor	N	
830.6313	Stability to normal and elevated temperatures, metals, and metal ions	N	
830.6314	Oxidation/reduction: chemical incompatibility	N/A [5]	
830.6315	Flammability	N/A [6]	
830.6316	Explodability	N/A [5]	
830.6317	Storage stability	N	
830.6319	Miscibility	N/A [6]	
830.6320	Corrosion characteristics	N	
830.7000	pH	N	
830.7050	UV/Visible absorption	N [7]	
830.7100	Viscosity	N/A [6]	
830.7200	Melting point/melting range	N	
830.7220	Boiling point/boiling range	N/A [6]	
830.7300	Density/relative density/bulk density	N	
830.7370	Dissociation constants in water	N/A [5]	
830.7550	Partition coefficient (n-octanol/water), shake flask method	N	
830.7840	Water solubility: column elution method; shake flask method	N	
830.7950	Vapor pressure	N	

[1] Y = Yes; N = No; N/A = Not Applicable. The Riceco 95% T was transferred (9/97) from Cedar Chemical Company (EPA Reg. No. 56077-33); the data cited above were submitted by Cedar Chemical Company. The registrant must confirm that the manufacturing site and process have not changed since the product transfer; otherwise, additional product chemistry data may be required.

[2] MRID 40633001 was reviewed under CB Nos. 4972, 4973, and 4974, 3/14/89, G. Makhijani; CB No. 6119, 2/23/90, S. Funk; and RD Memorandum 6/1/90, R. Lozada; remaining references were reviewed as noted.

[3] RD Memorandum, 11/14/90, R. Lozada.

[4] CSF dated 6/22/98 obtained from the product jacket was accepted by the Registration Division (8/5/98, L. Jones; a copy of the memorandum was unavailable).

[5] Based on the chemical properties of propanil, these data are not required for the T/TGAI.

[6] Data are not required because the T/TGAI is a solid at room temperature.

[7] The OPPTS Series 830, Product Properties Test Guidelines require data pertaining to UV/visible absorption for the PAI.

AGENCY MEMORANDA CITED IN THIS DOCUMENT

CB No(s):	4972, 4973, and 4974
Subject:	Propanil Data Call-In Notice for Product Chemistry Data Relating to Potential Formation of Halogenated Dibenzo-p-Dioxin Contaminants in Technical Products.
From:	G. Makhijani
To:	V. Prunier and J. Miller and R. Engler
Dated:	3/14/89
MRID(s):	40477301, 40477302, and 40633001

CB No(s):	6119
Subject:	Product Chemistry Data Review for Technical 90% Propanil to Determine the Potential for Halogenated Dibenzo-p-Dioxin/Dibenzofuran Formation. ID No. 56077-33.
From:	S. Funk
To:	E. Feris
Dated:	2/23/90
MRID(s):	40633001

DP Barcode(s):	RD Memorandum
Subject:	Product Chemistry Review on Propanil Technical; EPA Registration Number: 56077-33.
From:	R. Lozada
To:	R. Taylor
Dated:	6/1/90
MRID(s):	40633001

DP Barcode(s):	RD Memorandum
Subject:	Product Chemistry Review on Propanil Technical; EPA Registration Number: 56077-33.
From:	R. Lozada
To:	R. Taylor
Dated:	11/14/90
MRID(s):	None

CB No(s):	7467
Subject:	Rohm and Haas Chemical Company: Response to the Propanil Reregistration Standard: Product Chemistry Data.
From:	R. Perfetti
To:	R. Englar and L. Rossi
Dated:	3/21/91
MRID(s):	40923201

CB No(s):	7192
Subject:	Propanil: Registrant's response to product chemistry data requirements.
From:	W. Smith
To:	T. Stowe
Dated:	1/25/91
MRID(s):	None (40477301, 40477302, and 40633001)

DP Barcode(s):	RD Memorandum D225017
Subject:	Product Chemistry Review; Reg./File Symbol No.: 707-181; Product Name: STAM Technical 98% DCA; Company: Rohm & Haas Co.
From:	S. Mathur
To:	R. Taylor
Dated:	4/19/96
MRID(s):	43969201

DP Barcode(s):	RD Memorandum D232948
Subject:	Product Chemistry Review; Reg. No. or File Symbol No. 707-181.
From:	H. Podall
To:	R. Taylor
Dated:	1/31/97
MRID(s):	None

DP Barcode(s):	RD Memorandum D253649
Subject:	Product Chemistry Review of Griffin Propanil Technical.
From:	A. Smith
To:	L. Jones
Dated:	4/9/99
MRID(s):	44681701-44681703, 44681704, and 44751501

DP Barcode(s): DXXXXXX
Subject: Product Chemistry Review of Data for Rohm and Haas 97% T (EPA Reg. No. 707-181).
From:
To:
Dated: Currently under review.
MRID(s): 40477301 and 40477302

PRODUCT CHEMISTRY CITATIONS

Bibliographic citations include only MRIDs containing data which fulfill data requirements.

References (cited):

00150488 Rohm and Haas Co. (1985) Ground Water Data for Propanil: Product Chemistry. Unpublished compilation. 221 p.

40477301 Carpenter, C. (1987) Product Chemistry Section for Stam Technical 6-2623 and 6-2502: Laboratory Project ID CRC-87-385. Unpublished compilation. 147 p.

40477302 Carpenter, C. (1987) Product Chemistry Section for Stam Technical 6-2623 and 6-2502: Physical and Chemical Properties: Laboratory Project ID CRC-87-385. Unpublished study. 4 p.

40633001 Bernard, M. (1987) Product Chemistry for Propanil Technical. Unpublished study prepared by Cedar Chemical Corp. 14 p.

40923201 Rothman, A. (1980) Vapor Pressure of Propanil (STAM): Technical Report No. 7199. Unpublished study prepared by Rohm and Haas Co. 18 p.

43969201 Craven, D. (1996) Stam Technical Product Chemistry Guidelines Series 62: Analysis and Verification of Certifiable Limits of Product Ingredients: Lab Project Number: APR-95-251: 73P-95-40:APR-95-253. Unpublished study prepared by Rohm and Haas Co. 176 p.

44681701 Dowler, C. (1998) Technical Propanil: Product Identity and Composition: Lab Project Number: P98-006. Unpublished study prepared by Griffin L.L.C. 29 p. {OPPTS 830.1550, 830.1600, 830.1620, 830.1670, 830.1750}

44681702 Dowler, C. (1998) Technical Grade Propanil: Analysis and Certification of Product Ingredients: Lab Project Number: P98-006. Unpublished study prepared by Griffin L.L.C. 25 p. {OPPTS 830.1550, 830.1700, 830.1750}

44681703 Dowler, C. (1998) Griffin Analytical Method TM-1199: Propanil in Technical Grade or Formulated Product by GLC: Lab Project Number: P98-006: TM-1199. Unpublished study prepared by Griffin L.L.C. 31 p. {OPPTS 830.1800}

44681704 Dowler, C. (1998) Griffin Analytical Method TM-1207: Propanil Impurities in Technical Product by GC/MS: Lab Project Number: P98-006: TM-1207. Unpublished study prepared by Griffin L.L.C. 23 p. {OPPTS 830.1800}

44751501 Dowler, C. (1998) Technical Propanil: Physical and Chemical Properties: Lab Project Number: P68-006. Unpublished study prepared by Griffin L.L.C. 11 p. {OPPTS 830.6302, 830.6303, 830.6313, 830.6314, 830.6320, 830.7000, 830.7200, 830.7300}